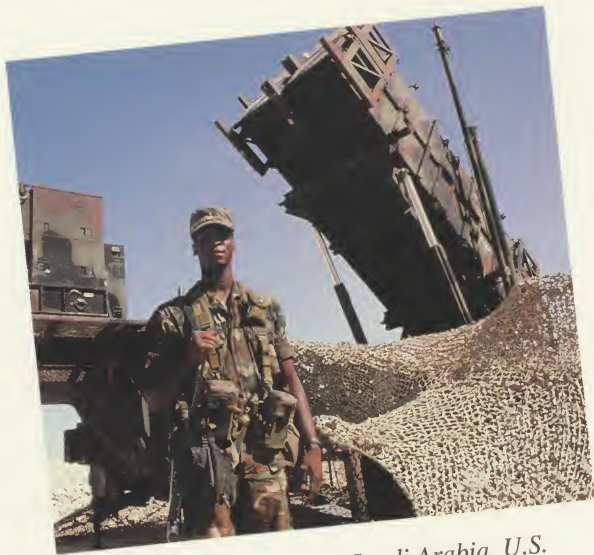


U.S. Army Information Systems

Open and proprietary systems coexisting on mainframe

*Supercenter provides
new standard of
excellence in Army
data processing*



Patriot missile launcher in Saudi Arabia. U.S. Army Patriot missile project benefits from USAISC-MICOM data services.

At Redstone Arsenal in Alabama, the United States Army Information Systems Command (USAISC) serves a large, diverse, and geographically far-flung client population. Through a massive database, which requires 1,600 gigabytes of online storage, USAISC retains all the control, logistics, and procurement information needed to run a national inventory control and maintenance center for the U.S. Army Missile Command (MICOM).

As one of the Army's new supercenters for data processing, USAISC-MICOM also provides support, through the worldwide Defense Data Network, to clients such as the Strategic Defense Command (home for the "Star Wars" missile defense program), the Program Executive Officer for Air Defense (which oversees the Patriot missile project), the Program Executive Officer for Fire Support, the Corps of Engineers, the Army's Test Measurement and Diagnostic Equipment Control, and the Ordnance Missile Munitions Center and School.



U.S. Army Missile Command, one of USAISC-MICOM's Customers at Redstone Arsenal.

MARKET PRINCIPLES GOVERN DELIVERY OF INFORMATION SERVICES

While U.S. federal budget dollars fund USAISC-MICOM, it must compete to acquire the funds from its client base. Just like private businesses with contracts at Redstone Arsenal, it operates in a competitive marketplace. If the service delivered by USAISC-MICOM to weapons systems managers, for instance, is not superior in quality, it loses the business. Tom Moore, Installation Support Director at USAISC-MICOM, strongly prefers this arrangement because it provides him with a better measure of the quality of the service provided to his customers.

Because it operates in a competitive environment, USAISC-MICOM constantly attends to the bottom line. Decisions about the delivery of information services consider a host of questions concerning their cost and performance. How can managers keep costs down? Will a particular

product or service offer price/performance advantages over the competition? Will the product or service enable USAISC-MICOM to respond to the diverse and changing information needs of its clients?

DATA CENTER REQUIRES EXTRA HORSEPOWER

In recent years, the USAISC-MICOM database, which had been running on nine MVS-capable processors, simply could not meet the growing demands of clients. The contention for access created overhead costs that exceeded the cost of running the application. Moore remembers, "Quite frankly, the overhead almost put us out of business."

Saddled by inadequate capacity and facing rising numbers of users, USAISC-MICOM needed some horsepower. Installation in 1987 of a single Amdahl 5890-200E processor with 128 megabytes of memory and 32 channels and the addition in 1989 of a logically partitioned UTS® system domain of 32 megabytes took care of the problem. The UTS system is Amdahl's mainframe implementation of UNIX® System V.

The Amdahl machine "could easily run our cycles," Moore reports. In the months that followed installation, USAISC-MICOM increased the number of interactive users on its system from 1,200 to more than 9,000. As a result, "we could legitimately run a commodity command standard system and, not only that, we could give a beautiful response time to our customers," Moore points out.

UTS OPERATING SYSTEM PROVIDES MIGRATION PATH FROM MVS TO OPEN SYSTEMS

In recent years, the global network of clients and servers maintained by the Department of Defense has imposed stringent compatibility requirements on Army information systems. According to Moore, "We've got to distribute data all over the place." At USAISC-MICOM and elsewhere, the Army has, therefore, committed itself to standardization and to open systems, with the slow migration from minicomputers to large file servers and client machines operating in an open environment under the UNIX system.

USAISC-MICOM IN BRIEF

Redstone Arsenal, near Huntsville, Alabama, has been the center for the U.S. Army missile and rocket program since 1950, when the Army moved Dr. Wernher Von Braun and 100 other missile experts there from Fort Bliss, Texas. The Army team at Redstone pioneered many early achievements in space flight, including the United States' first scientific earth satellite and first lunar probe.

Today, Redstone Arsenal houses four Army Commands that contribute to the research, development, testing, and production of missile and rocket systems, including an element of the U.S. Army Information Systems Command—USAISC-MICOM.

USAISC-MICOM provides a full range of information services to all Army Commands housed at Redstone and to other Army customers off the arsenal site. Services include automated data processing, software development for unique data processing applications, satellite telecommunications, multimedia presentation services, and printing and binding. USAISC-MICOM also manages the acquisition of information system hardware and software for all Army Commands at Redstone.

Managed by a civilian director of information management, USAISC-MICOM employs more than 650 people, civilian and military, to provide these services. They operate or oversee hardware valued at more than US\$100 million and software valued at more than US\$600 million.



USAISC-MICOM supports Redstone's Battle Field Automation Directorate, which updates software in Army missiles.

Amdahl and the UTS operating system have played a key role in this process. Every large installation within the Army either has an Amdahl computer or access to an Amdahl computer on which to run Army standard information management systems. The Patriot Missile Project Office, for instance, runs an operating system that complies with POSIX™ standards on computers linked to the Amdahl 5890/200E at Redstone running the UTS system.

With its capacity to communicate directly with MVS and its conformance to POSIX standards, the UTS system has provided the migration path into open systems for the Army. At USAISC-MICOM, the full transition to a POSIX-compliant system will be a complicated and lengthy process. Moore does not doubt that MVS databases will be around for years to come. Rapid conversion would be very costly "in these stringent times." Over the long term, however, he believes the transition to be inevitable because a POSIX-

compliant system enables programmers to develop and test applications with substantially greater ease and rapidity than does MVS.

"There are no flashing lights or ringing bells on this Amdahl processor," Moore concludes, "and it doesn't look like the *Starship Enterprise*, but this is the most important thing that has happened to USAISC-MICOM during my 30 years in automatic data processing. The Amdahl system finally gave us the capability to provide good interactive service to our users, throughout Redstone Arsenal and throughout the country."

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